

WHAT IS CLAIMED IS:

1. A method of reducing unwanted DC noise of an input signal, comprising:
receiving an input signal having an active period and an inactive period;
sampling said input signal during said inactive period to generate a sampled signal;
determining said unwanted DC noise from said sampled signal; and
subtracting said unwanted DC noise from said input signal during said active period.
2. The method of claim 1, wherein said input signal is a down-converted channel.
3. The method of claim 2, wherein said down-converted channel is a down-converted television (TV) channel.
4. The method of claim 3, wherein said down-converted TV channel has a continuous frequency spectrum that includes DC.
5. The method of claim 3, wherein said down-converted TV channel has a continuous frequency spectrum from about -3 MHz to 3 MHz.
6. The method of claim 1, wherein said input signal is a down-converted TV channel such that said inactive period occurs during a horizontal blanking period that carries no useful channel information, and wherein said sampling step includes the step of sampling said down-converted TV channel during said horizontal blanking period, and said step of determining includes the step of

filtering said sampled signal using a passband that includes 0 Hz so as to isolate said unwanted DC noise.

7. The method of claim 6, wherein said step of determining includes the step of storing said unwanted DC noise during said horizontal blanking period.

8. The method of claim 7, wherein said step of subtracting comprises the step of subtracting said unwanted DC noise from said down-converted TV channel during said active period.

9. The method of claim 6, wherein said down-converted TV channel is a quadrature signal having an I baseband signal and a Q baseband signal, and wherein said step of sampling includes the step of sampling said I baseband signal and said Q baseband signal during said horizontal blanking period, to generate an I sampled signal and a Q sampled signal, respectively.

10. The method of claim 9, wherein said step of determining includes the step of filtering said I sampled signal and said Q sampled signal during said horizontal blanking period.

11. The method of claim 9, wherein said step of subtracting includes the step of subtracting said unwanted DC noise from said I baseband signal and said Q baseband signal.

12. The method of claim 1, wherein said unwanted DC noise includes a DC offset voltage.

13. The method of claim 1, wherein said unwanted DC noise includes 1/f noise.

14. A method of processing an RF input signal, comprising:
receiving an RF input signal having a plurality of channels;
directly down-converting a desired channel to baseband, said down-converted channel having a continuous frequency spectrum around 0 Hz; and
compensating said down-converted channel for unwanted DC noise without introducing a spectrum null at approximately 0 Hz.

15. The method of claim 14, wherein said unwanted DC noise includes at least one of a DC offset voltage and 1/f noise.

16. The method of claim 14, wherein said down-converted channel includes an active period and an inactive period, and further comprising the steps of:
determining unwanted DC noise of said down-converted channel during said inactive period; and
compensating said down-converted channel for said unwanted DC noise during said active period.

17. The method of claim 16, wherein said step of compensating comprises the steps of storing said unwanted DC noise during said inactive period, and subtracting said unwanted DC noise from said down-converted channel during said active period.

18. The method of claim 17, wherein said step of compensating comprises the step of filtering the unwanted DC noise to isolate frequency spectrum around 0 Hz.

19. The method of claim 14, wherein said inactive period is a horizontal blanking period, and said step of determining includes the step of determining

said unwanted DC noise during said horizontal blanking period, and storing said unwanted DC noise until said horizontal blanking period is complete.

20. The method of claim 14, wherein said down-converted channel is a quadrature signal having an in-phase (I) component and a quadrature (Q) component, and wherein said step of compensating comprises the step of compensating said I component without introducing a DC null around 0 Hz in said I component, and compensating said Q component without introducing a DC null around 0 Hz in said Q component.

21. A compensation circuit to reduce unwanted DC noise in an input signal, comprising:

- an input terminal for receiving an input signal having an active period and an inactive period;

- means for determining unwanted DC noise during said inactive period;

- means for subtracting said unwanted DC noise from said input signal during said active period.

22. The compensation circuit of claim 21, wherein said means for determining includes means for sampling said input signal, and means for filtering an output of said means for sampling using a passband that isolates signal spectrum around 0 Hz.

23. The compensation circuit of claim 22, wherein said means for subtracting includes a means for subtracting said isolated signal spectrum around 0 Hz from said input signal.

24. A compensation circuit to reduce unwanted DC noise in an input signal having an active period and an inactive period, comprising:

a combiner for subtracting a feedback signal from said input signal during said active period of said input signal;

a switch for sampling an output of said combiner during said inactive period; and

a filter having a passband around 0 Hz coupled to an output of said switch and having an output that provides said feedback signal to said combiner.

25. The compensation circuit of claim 24, further comprising a storage element, coupled between said switch output and said filter, wherein said storage element stores said switch output during said inactive period of said input signal.

26. The compensation circuit of claim 24, wherein said unwanted DC noise is at least one of DC offset and 1/f noise.